

CLAIMS

We Claim:

1. A respiratory suction apparatus comprising:

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a suction catheter for removing fluids from a respiratory tract of a patient by insertion of a distal end of the catheter into said respiratory tract and withdrawal of the distal end of the catheter through a portion of said tract while applying negative pressure to a lumen of the catheter;

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a protective sleeve surrounding a proximal longitudinal portion of the catheter;

a distal adapter configured for communication with a manifold of a patient's artificial airway;

a collar disposed within the adapter and partially surrounding the distal end of the catheter when the catheter is withdrawn from the manifold, the collar and the catheter defining a substantially uniform cylindrical space around a distal portion of the catheter, the cylindrical space capable of directing lavage solution into the adapter; and

a valve device configured in the adapter to substantially isolate the catheter from the manifold upon withdrawing the distal portion of the suction catheter into said manifold and applying suction through the catheter lumen.

2. A respiratory suction apparatus according to Claim 1, wherein the valve device comprises a flap valve disposed distal to a distal end of the collar.

3. A respiratory suction apparatus according to Claim 2, wherein the flap valve seats against the distal end of the collar upon applying suction through the catheter lumen.

4. A respiratory suction apparatus according to Claim 2, wherein the flap valve seats against a distal end of the catheter upon applying suction through the catheter lumen.

5. A respiratory suction apparatus according to Claim 1, further comprising a cleaning enclosure defined within the adapter wherein the distal end of the catheter is exposed to cleaning liquids and turbulent airflow during a cleaning procedure.

6. A respiratory suction apparatus according to Claim 5, wherein the valve device is disposed distal to the collar and comprises an aperture therethrough for establishing the turbulent

airflow.

7. A respiratory suction apparatus according to Claim 6, wherein the valve device is disposed so as to seat against a distal end of the collar.

8. A respiratory suction apparatus according to Claim 6, wherein the airflow is filtered ambient air metered through an opening defined through a wall of the cleaning enclosure.

9. A respiratory suction apparatus according to Claim 8, further comprising a valve disposed in the opening.

10. A respiratory suction apparatus comprising:

an elongate suction catheter having a distal end;

a protective sleeve surrounding a proximal portion of the catheter;

a distal adapter configured for communication with a manifold of a patient's artificial airway;

a collar disposed within the adapter and partially

surrounding the distal end of the catheter when the catheter is withdrawn from said manifold, the collar and the catheter defining a substantially uniform cylindrical space around a distal portion of the catheter, the cylindrical space capable of directing lavage solution into the adapter;

a cleaning enclosure defined within the adapter wherein the distal end of the catheter is exposed to cleaning liquids and turbulent airflow during a cleaning procedure;

means for providing a predetermined rate of airflow to the enclosure responsive to negative pressure within the catheter;

the catheter being protected at all serviceable times against environmental contamination by a combination of the sleeve, adapter and enclosure; and

a valve device, comprising an occluder and a tether, configured in the adapter whereby the occluder occludes the catheter responsive to a pressure differential between said manifold and the enclosure, the catheter opens the occluder responsive to manual insertion pressure on the catheter, and the tether retains the occluder.

11. A respiratory suction apparatus according to Claim 10, wherein the rate of airflow is responsive to application of

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a predetermined rate of
the enclosure.

Abstract